

Chapter 8 - Data Review

All data must be verified prior to its submittal to the SWQMIS database. A sample checklist used to assist with data verification is provided on DM&A's web page.

Contractors submitting data through TCEQ water programs must use the procedures, checklists, and/or forms required by their contracts (for example, TMDL data review checklists, CRP data summaries, or NPS data review checklists) to document data verification.

SWQMIS Data Loading Report

The DM&A Team assists in data verification and validation prior to loading into SWQMIS. The SWQMIS data loader includes a tool that performs a verification of data received from data collectors and/or their representative TCEQ project managers. This verification confirms that the dataset is correct in format and complete in content. The verification also ensures that DM&A can upload the data to SWQMIS without errors. The loading tool also produces a summary report used for further diagnostics of any errors. Project managers can use this report for secondary data review.

Data Dictionary for the SWQMIS Data Loading Validator Report

Submitting and Collecting Entities and Monitoring Types

Identifies all the combinations of Submitting Entity, Collecting Entity, and Monitoring Type Codes reported in the dataset, and descriptions of the codes are provided.

Frequency of Parameter Occurrence

Identifies the parameter codes, parameter descriptions, and the number of times the parameter appears in the dataset. Also includes the minimum "less-than" value, maximum "less-than" value, minimum quantifiable value, maximum quantifiable value, and mean values from the dataset.

Stations in Dataset

This section identifies sampled station IDs. Descriptions are provided for each station, along with the Basin ID and number of sampling events for each station.

Outliers (Requires verification prior to loading.)

Identifies the tag IDs, parameter codes, less than/greater than symbols, and values reported in the dataset that fall outside the predefined screening levels. The screening levels are listed in this section of the report as the minimum and maximum. If the minimum and/or maximum screening values appear outdated, complete a Parameter Code Request and submit to DM&A according to the process outlined in Chapter 2 in the SWQM DMRG.

Historical Basin Comparison

This section of the report provides each measurement that does not fall between the historical minimum and maximum value for a parameter in a basin. Dataset values outside the historical data levels for the basin-parameter code combination along with Tag ID, basin ID, station ID, parameter code, less than/greater than symbol, and the reported value are retrieved from the provided dataset. Historical minimum value, historical maximum value, historical mean value, and historical number of samples reported for the basin-parameter code combination are calculated using the most recent data (5-year period.) currently existing in SWQMIS in that basin for that parameter.

Historical Station Comparison

This section of the report provides each measurement that does not fall between the historical minimum and maximum value for a parameter at that station. Tag ID, station ID, station description, parameter codes, less than/greater than symbol, and the reported value are retrieved from the provided dataset. Historical minimum value, historical maximum value, historical mean value, and historical number of samples reported for the station-parameter code combination are calculated using the most recent data (5-year period) currently existing in SWQMIS at that station for that parameter.

Highest Values per Parameter

This section of the report provides the top ten highest values for each parameter code within the data set. Reported fields include station ID, station description, end date, end time, parameter code, less than/greater than symbols, value, and end depth.

Lowest Values per Parameter

This section of the report provides the top ten lowest values for each parameter code within the data set. Reported fields include station ID, station description, end date, end time, parameter code, less than/greater than symbols, value, and end depth.

Data Management Review

In addition to the verification checks automatically performed by the SWQMIS data loading tool, TCEQ data managers also perform verification and validation checks using output from the Data Loading Report. Using the report as a guide, data managers compare the quality assurance (QA) document associated with the data load (QAP, QAPP) to the report output. The data manager verifies that the data are intended to be stored in SWQMIS and that the proper signatures appear on the QA document. The data manager then verifies that the sampling dates coincide with the effective date of the QA document. The use of the correct Tag Prefix is verified, as well as the use of proper Submitting Entity, Collecting Entity, and Monitoring Type codes. The data managers also verify all station IDs and parameter codes in the Data Loading report against stations and parameters described in the project QA document. Finally, the data managers ensure that the data submitter has verified all outliers in the data set. In the event that the data managers find discrepancies between the data set and the quality assurance document, the data managers will contact the lead project staff for resolution.

Data Not Adhering to QA Documents

In the event that a data manager identifies data that was not collected as prescribed in a QA document or not covered by a QA document the data manager will return the data set to the lead project staff. The data manager will provide a Water Quality Planning Division (WQPD) Data Resubmittal Form to the project manager. It is the project manager's responsibility to complete the form detailing any excursions from the QA document. In addition to following the corrective action plan as described in the relevant QA document the project manager must also submit to data management any relevant documentation detailing the excursion from the QA document. The project manager then resubmits the data set, the Data Resubmittal Form, and any necessary documentation to the data manager. Once the data has been successfully loaded into SWQMIS, the Data Resubmittal Form will also be stored in the database to accompany the project's QA document(s).